WALLING, A.
Appl. No. To be assigned
US National Phase of PCT/SE03/00391
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AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A sensor and print-head (2) assembly comprised in a housing (1) for a hand-held and hand-operated printing device controlled by a processor (4), comprising at least one sensor means (S0, S1), a print-head array (60), input means (6) on said housing (1) connected to said processor (4) for input of assembly control commands, and means for keeping track of the assemblies and print-heads position on a print medium, **characterized** in that it comprises for a print out sweep with said array:

means for determining the x and y coordinates for at least one distal end (76, 78) of at least one row (70) of printing means in said print head array (60), and the angle of rotation of said row (70) with reference to a base line, made up of coordinates for the long side of an image stored to be printed, whereby every dot of a part of an image to be printed having determinable corresponding x and y coordinates related to a determined position for said row (70);

means for determining an x and y coordinate for a first tangent (80, 82) of said row (70) with the first part of said image to be printed, and at least one second tangent (84) for said image in relation to a mathematically defined configuration (72, 74) relating to the rotation angle of the row and said distal end (76, 78), said second tangent making up a boundary for when a print out of said part image should take place;

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means for determining if said row (70) during movement is closing in to said

second tangent (84) from the clockwise or counter clockwise direction;

means for providing a print out decision for a subsequent part image to be printed

through said print-head (60) in front of a print out, if the row (70) is closing in clockwise

to the second tangent (84) when using the upper distal end (76) of the row (70) as

reference for the second tangent (84), and the vice versa when using the lower distal end

(78) as reference for a sweep.

2. (currently amended)   An assembly according to claim 1, wherein the print-head

(60) is of the ink-jet type with spray nozzles (12) making up said row (70).

3. (original) An assembly according to claim 2, wherein the first and last nozzle

in said row are references for said distal ends.

4. (currently amended) An assembly according to claims 1-3claim 1, wherein

said mathematical configuration has one origin on at least one of the distal ends of said

row.

5. (currently amended) An assembly according to claims 1-4claim 1, wherein

said configuration is used for clockwise rotation and/or counter clockwise rotational print

out feeding through said row.

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6. (currently amended) An assembly according to ~~claims 1-5~~claim 1, wherein said mathematical configuration is a line suitable for forward feeding of said array.

7. (currently amended) An assembly according to ~~claims 1-5~~claim 1, wherein said mathematical configuration is a curve suitable for rotation feeding of said array.

8. (currently amended) An assembly according to ~~claims 1-7~~claim 1, wherein a frame is related to each part image to be printed, thus defining every part image through at most four tangent coordinates for a first and a second tangent.

9. (original) An assembly according to claim 8, wherein coordinates for a frame are stored in a table sorted in accordance with corresponding part images to be printed.

10. (currently amended) An assembly according to claim 8~~ or 9~~, wherein said frame is longer then the actual part image to be printed, whereby a next image to be printed is pre checked according to its alignment for printing.

11. (currently amended) An assembly according to ~~claims 1-9~~claim 1, wherein said array row is approximated with at least one half of a rectangle, thus facilitating the finding of a tangent for said row for a part image to be printed.

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12. (currently amended) A method for a sensor and print-head (2) assembly comprised in a housing (1) for a handheld and hand operated printing device controlled by a processor (4), comprising at least one sensor means (S0, S1) for keeping track of the assemblies and print-heads position on a print medium and a print-head array (60) **characterized** in that it comprises, during a print out sweep with said array, the steps of:

- determining the position of the array at each moment;

- predicting the positions of the array for subsequent moments in order to

- determine whether a text block or an image is about to be printed during said subsequent moments and if so

- deciding whether the complete text block or image, or a predefined part of the text block or the image will be covered by said array during said print out sweep, based on said predictions, and if not,

- omitting a print out of said text block or image, or said part of the text block or image during said print out sweep, otherwise

- printing out said text block or image during said print out sweep.

13. (currently amended) A method for a sensor and print-head (2) assembly comprised in a housing

(1) for a hand-held and hand-operated printing device controlled by a processor (4), comprising at least one sensor means (S0, S1), a print-head array (60), input means

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(6) on said housing (1) connected to said processor (4) for input of assembly control

commands, and means for keeping track of the assemblies and print-heads position on a

print medium, **characterized** in that it comprises, during a print out sweep with said

array, the steps of:

determining the x and y coordinates for at least one distal end (76, 78) of at least

one row (70) of printing means in said print head array (60), and the angle of rotation of

said row (70) with reference to a base line, made up of coordinates for the long side of an

image stored to be printed, whereby every dot of a part of an image to be printed having

determinable corresponding x and y coordinates related to a determined position for said

row (70);

determining an x and y coordinate for a first tangent (80, 82) of said row (70) with

the first part of said image to be printed, and at least one second tangent (84) for said

image in relation to a mathematically defined configuration (72, 74) relating to the

rotation angle of the row and said distal end (76, 78), said second tangent making up a

boundary for when a print out of said part image should take place;

determining if said row (70) during movement is closing in to said second tangent

(84) from the clockwise or counter clockwise direction; and

providing a print out decision for a subsequent part image to be printed through

said print-head (60) in front of a print out, if the row (70) is closing in clockwise to the

second tangent (84) when using the upper distal end (76) of the row (70) as reference for

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reference for the second tangent ~~(84)~~, and the vice versa when using the lower distal end

~~(78)~~ as reference for a sweep.

14. (original) A method according to claim 13, wherein the print-head is of the ink-jet type with spray nozzles making up said row.

15. (original) A method according to claim 14, wherein the first and last nozzle in said row are references for said distal ends.

16. (currently amended) A method according to ~~claims 13-15~~claim 13, wherein said mathematical configuration has one origin on at least one of the distal ends of said row.

17. (currently amended) A method according to ~~claims 13-16~~claim 13, wherein said configuration is used for clockwise rotation and/or counter clockwise rotational print out feeding through said row.

18. (currently amended) A method according to ~~claims 13-17~~claim 13, wherein said mathematical configuration is a line suitable for forward feeding with less rotation of said array.

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19. (currently amended) A method according to ~~claims 13-17~~claim 13, wherein said mathematical configuration is a curve suitable for rotation feeding of said array.

20. (currently amended) A method according to ~~claims 13-19~~claim 13, wherein a frame is related to each part image to be printed, thus defining every part image through at most four tangent coordinates for a first and a second tangent.

21. (original) A method according to claim 20, wherein coordinates for a frame are stored in a table sorted in accordance with corresponding part images to be printed.

22. (currently amended) A method according to claim 20 ~~or 21~~, wherein said frame is longer then the actual part image to be printed, whereby a next image to be printed is pre checked according to its alignment for printing.

23. (currently amended) A method according to ~~claims 13-22~~claim 13, wherein said array row is approximated with at least one half of a rectangle, thus facilitating the finding of a tangent for said row for a part image to be printed.

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